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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,231	11/25/2003	Wei Guo	H0004345(4016)	4341

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EXAMINER	
SHEEHAN, JOHN P	
ART UNIT	**PAPER NUMBER**
1742	

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/720,231	GUO ET AL.	
	Examiner	Art Unit	
	John P. Sheehan	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-23,40 and 41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-23,40 and 41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *Jan. 18, 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 7 to 23, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lam et al. (Lam, EPO Document No. 1 041 170 A2).

Lam teaches nickel-vanadium sputtering targets having a purity of at least 99.98% (page 2, paragraph 0006). Based on the fact that Lam's Table 1 lists fluorine, chlorine, oxygen and nitrogen, which are all gases, it would appear that the purity level of Lam's sputtering targets are based the inclusion of gases. If, as recited in applicants' claims (e.g., claim 7), gases were excluded from the purity determination of Lam's sputtering target, the purity of the target in Lam's Table 1 would be purer than the 99.9909 % purity listed in Lam's Table 1 and would appear to encompass the purity levels of applicants' claims.

Further, Lam teaches that the V used to make the disclosed target has an actual purity level of 99.8 to 99.95 % and the Ni used to make the disclosed target has an

actual purity level of 99.995 to 99.9997 (page 2, paragraph 0009). Using these purity levels and an alloy of 7% V and 93% Ni the following calculation determines the purity of a sputtering target product.

0.93 (99.9997) = 92.9996

0.07 (99.95) = 6.9965
99.9962%

or an alloy of 4% V and 96% Ni;

0.96 (99.9997) = 95.9997

0.04 (99.95) = 3.998
99.9977%

Lam also teaches a process for making the disclosed sputtering target (page 2, paragraph 0008 to page 3, paragraph 15) which appears to be very similar to, if not the same as, applicants' disclosed method and the method recited in applicants' product by process claims 40 and 41 (compare the applicants' specification pages 7 to 9, paragraphs 26 to 29 and claims 40 and 41 to Lam's paragraphs 0010 to 0014). Thus, the composition of Lam's sputtering target is encompassed by the composition of applicants' claimed sputtering target and Lam's process of making the disclosed sputtering target appears to be very similar to, if not the same as, applicants' disclosed method of making the instantly claimed sputtering target.

Lam also discloses that a fine grain structure is desired in sputtering targets so as to produce uniform sputtering (page 3, line 24).

The claims and Lam differ in that Lam does not teach the crystal grain size recited in applicants' claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the composition of Lam's raw materials and sputtering target are encompassed by the composition of applicants' disclosed raw material and sputtering target and Lam's process of making the sputtering target appears to be very similar to, if not the same as, applicants' disclosed method of making the instantly claimed sputtering target. In view of this, Lam's sputtering target would be expected to posses all the same properties as recited in the instant claims, including the purity and crystal grain size recited in applicants' claims, In re Best, 195 USPQ, 430 and MPEP 2112.01.

> "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada,15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best,195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

This position by the Examiner is considered to be particularly valid in that applicants have not professed any criticality associated with the disclosed process of making the claimed sputtering target. For example, see paragraph 0029 of the specification wherein applicants disclose exemplary methods of making the claimed sputtering target (see paragraph 0029, line 3) and refer to the single example set forth in paragraph 0034 as exemplary (see paragraph 0029, the penultimate line). From these disclosures it would appear that the method of making the claimed sputtering target is not critical and

that there is no particular method that must be used to make the claimed sputtering target.

Further, in view of Lam's disclosure that a fine grain structure is desired in sputtering targets so as produce uniform sputtering (page 3, line 24), one of ordinary skill in the art would be motivated to produce a target having a fine grain structure so as to produce uniform sputtering.

Finally, even if the process steps recited in applicants product by process claims 40 and 41 are, in fact, different than Lam's disclosed process, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the process steps recited in applicants' product by process claims do not necessarily lend patentability to the claimed product, MPEP 2113.

> "[E]ven though product-by-process claims are lim - ited by and defined by the process, determination of patentability is based on the product itself. The patent- ability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe* ,777 F.2d 695,698,227 USPQ 964,966 (Fed. Cir.1985.

Response to Arguments

3. Applicant's arguments filed January 18, 2006 have been fully considered but they are not persuasive.

Applicants' argue that Lam teaches a crystal grain size of 47 microns while applicants claims recite a crystal grain size of "less than or equal to 40 microns". The

Examiner is not persuaded. The crystal grain size of 47 microns taught by Lam and cited by applicants is found in one of Lam's examples. The teachings of a reference are not limited to merely that which is set forth in the examples. Instead "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art", see MPEP 2123 and In re Widmer, 147 USPQ 518, 523 (CCPA 1965). In the instant case, as set forth in the modified statement of the rejection, in view of Lam's disclosure that a fine grain structure is desired in sputtering targets so as produce uniform sputtering (page 3, line 24), one of ordinary skill in the art would be motivated to produce a target having a fine grain structure so as to produce uniform sputtering. Further, the crystal grain size of 47 microns exemplified by Lam and the crystal size of 40 microns recited in the applicants' claims are very similar and closely approximate each other, therefore one of ordinary skill in the art would have expected that Lam's sputtering target and the instantly claimed sputtering target would have the same properties. The instant situation is analogous to that set forth in *In re Peterson,* 65 USPQ2d 1379, 1382, citing *Titanium Metals Corp. v. Banner*, 227 USPQ 773, 779 and MPEP 2144.05.

> "a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties.*Titanium Metals Corp.of America v.Banner* ,778 F.2d 775, 227 USPQ 773 (Fed.Cir.1985)

Applicants argue that Lam's and applicants' processes are in fact different in that Lam teaches that the sputtering target is cross rolled while the applicants' process employs uni-directional rolling. The Examiner is not persuaded. Lam's disclosed

process is not limited to cross rolling, but rather Lam discloses that the sputtering target "may be cross rolled" (page 3, lines 24 and 25, emphasis added by the Examiner), that is, cross rolling is not required but rather is one option that can be used to make Lam's target.

Applicants' arguments based on the premise that "It is generally known in the art that it can become increasingly difficult to obtain fine grain sizes with increasing purity of material...." is not persuasive in that applicants have not provided any evidence in support of this assertion.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John P. Sheehan
Primary Examiner
Art Unit 1742

jps